

## Lighthouse 8 (Checkpoint 2)

1. Complete and simplify times table surd grid

×	$\sqrt{6}$	$\sqrt{2}$	$\sqrt{3}$
$\sqrt{10}$			
$\sqrt{5}$			
$\sqrt{12}$			

2. Rationalise the surd  $\frac{5}{\sqrt{3}}$

3.  $a = 36$  cm is given correct to two sig figs.  
What is the:

a) Upper bound?      b) Lower bound?

4. Calculate the answer, give your answer in denary

a)  $(2 \times 10^4) + (6 \times 10^3)$       b)  $(1.2 \times 10^5) \times (6 \times 10^{-4})$       c)  $(9 \times 10^3) \div (6 \times 10^5)$

5. A sphere has a volume of  $\frac{500}{3} \pi \text{ cm}^3$ . Calculate the radius of the sphere.

6. What is  $0.\dot{1}8$  as a fraction?

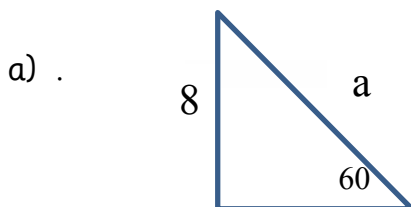
7. Solve 
$$\begin{aligned} 2x^2 - y &= 5 \\ x + y &= 1 \end{aligned}$$

8. Show that the lines AB and CD are perpendicular.  
A( 7,4 ) & B( -5, -20)                      C( 9,-2 ) & D( -3,4 )

9. Factorise and solve

a)  $3x^2 - 16x - 35 = 0$                       b)  $25a^2 - 16 = 0$

10. Find the value of  $a$  in this triangle, rationalise your answer.



$x$	$f$	$fd$
$0 \leq x \leq 4$	10	
$4 \leq x \leq 12$		3.5
$12 \leq x \leq 16$	6	

11. Find the missing values for the histogram.

12. The probability of Ralph being late is 0.2. What is the probability of Ralph being on time on **at least 2 days** over a 3 day period?